# REMARKS

## The Invention

The present invention features methods and compositions useful for treating diseases associated with tissue necrosis.

## Support for Amendments

Support for the amendment to claim 9 is found in the specification at page 24, lines 4-6. Support for the amendments to claims 24 are found in the specification at page 33, lines 7-15. Support for new claim 41 is found at page 24, lines 7-12. No new matter is introduced by these amendments.

A "marked up" version of the claims showing the changes made and an appendix of the claims as pending are attached.

## The Office Action

Claims 1, 2, 9, 10, 17-25, and 32-37 are pending in this application. Claim 24 is rejected under 35 U.S.C. § 112, first paragraph, for a lack of enablement. Claims 1, 9, and 24 are rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. Claims 2, 10, 17-23, 25, and 32-37 are objected to as depending from a rejected claim. These rejections are addressed below, in the order in which they appear in the Office Action.

## Rejections Under 35 U.S.C. § 112, first paragraph

Claim 24 stands rejected under 35 U.S.C. § 112, first paragraph, for a lack of enablement. Specifically, the Examiner asserts the specification, while enabling for the identified neurodegenerative diseases, is not enabled for any "condition." Therefore, the Examiner finds that the scope of the claims is not commensurate with the scope of the enablement.

Applicants note that claim 24 has been amended to specify conditions "associated

with necrosis" and a new claim (claim 41) which depends from claims 24 identifies necrosis-associated conditions that are amenable to treatment by the methods and compositions of the present invention. The present invention, as currently claimed, teaches compositions and methods useful for reducing or preventing necrotic cells death. A skilled artisan in the medical field will understand which conditions have a component of necrotic cell death, and will recognize that such a condition is amenable to treatment according to the present invention. Additionally, there are many excellent animal models of these human diseases, which further allows an artisan to monitor the necrotic component. Accordingly, Applicants submit that the invention, as claimed, is fully enabled, and request this rejection be withdrawn.

Rejections Under 35 U.S.C. § 112, second paragraph

Claims 1, 9, and 24 stand rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. Claim 1 is amended to include only the chemical compound, not a pharmaceutical composition. Claim 9 is amended to require that the target cell be "treating" with the compound. A skilled artisan will immediately recognize that the term "treating" includes exposing the target cell to the compound, in a sufficient amount and in an appropriate manner, to reduce necrosis. Claim 24 is amended to require that treatment be administered to a patient. A patient, for the purpose of the present invention, is a subject diagnosed with a necrosis-associated condition (see page 33, lines 7-15).

In view of these amendments, Applicants respectfully request removal of this rejection.

## CONCLUSION

Applicants submit that the claims are in condition for allowance, and such action is requested. Enclosed is a petition to extend the period for replying for three months, to and including November 30, 2001. If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

Date: November 30, 2001

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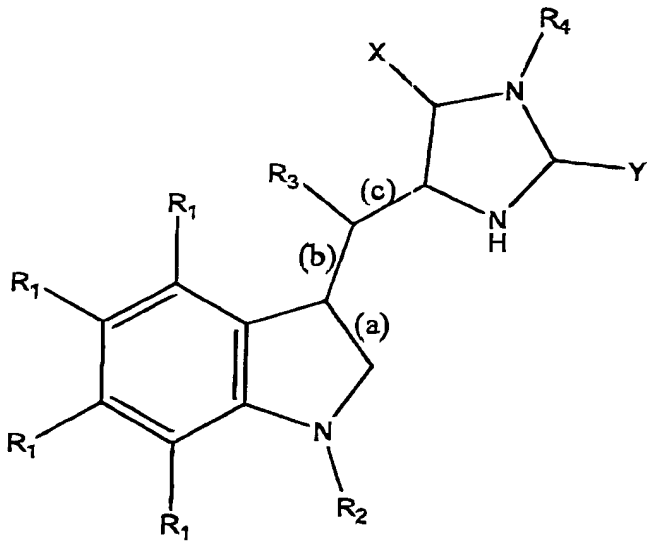
## Version With Markings to Show Changes Made

1. A chemical compound [in a pharmaceutically acceptable carrier, said compound] having the formula:




wherein

each $R_1$ is independently selected from the group consisting of hydrogen, methyl, carboxy, hydroxyl, methoxyl, amino, and nitro;

$R_2$ is selected from the group consisting of hydrogen, alkyl, and acyl;

$R_3$ is selected from the group consisting of alkyl, acyl, halogen, hydrogen, or hydroxyl;

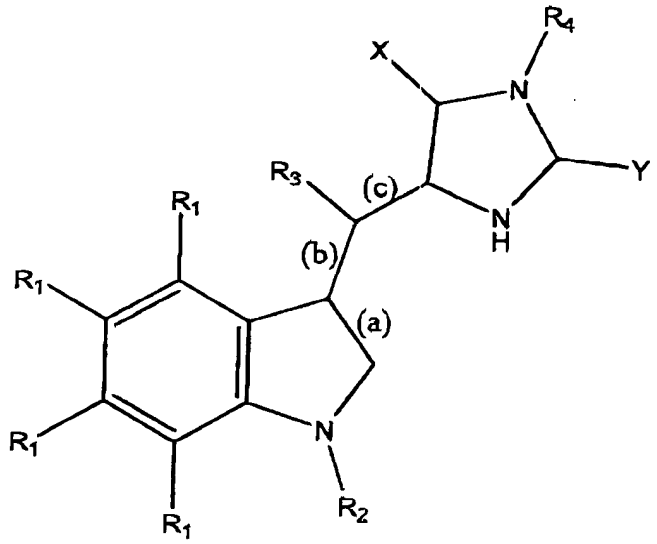
$R_4$ is selected from the group consisting of methyl, hydroxyl, carboxyl, and linear and branching alkyl groups;

X is selected from the group consisting of =O, -OH and -H;

Y is selected from the group consisting of =S and $-SR_5$, where $R_5$ is either hydrogen or an alkyl group; and

each of the bonds (a), (b), and (c) independently is either a double or single bond, provided, however, that bond (a) and bond (b) are not both double bonds.

9. A method for decreasing necrosis, said method comprising [contacting] treating a cell with a chemical compound, said compound having the formula:




wherein

each $R_1$ is independently selected from the group consisting of hydrogen, methyl, carboxy, hydroxyl, methoxyl, amino, and nitro;

$R_2$ is selected from the group consisting of hydrogen, alkyl, and acyl;

$R_3$ is selected from the group consisting of alkyl, acyl, halogen, hydrogen, or hydroxyl;

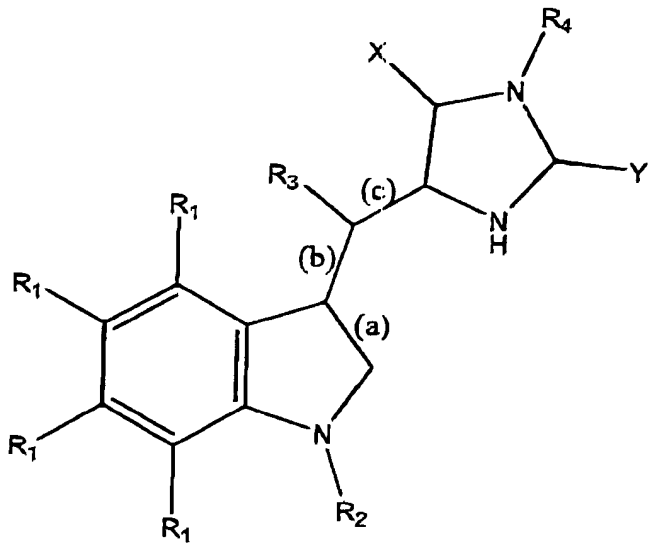
$R_4$ is selected from the group consisting of methyl, hydroxyl, carboxyl, and linear and branching alkyl groups;

X is selected from the group consisting of =O, -OH and -H;

Y is selected from the group consisting of =S and $-SR_5$, where $R_5$ is either hydrogen or an alkyl group; and

each of the bonds (a), (b), and (c) independently is either a double or single bond, provided, however, that bond (a) and bond (b) are not both double bonds.

24. A method for treating a condition characterized by necrosis, in a [subject] patient, said method comprising the steps of administering a chemical compound having the formula:




to said subject, in a dosage sufficient to decrease necrosis, wherein

each $R_1$ is independently selected from the group consisting of hydrogen, methyl, carboxy, hydroxyl, methoxyl, amino, and nitro;

$R_2$ is selected from the group consisting of hydrogen, alkyl, and acyl;

$R_3$ is selected from the group consisting of alkyl, acyl, halogen, hydrogen, or hydroxyl;

$R_4$ is selected from the group consisting of methyl, hydroxyl, carboxyl, and linear and branching alkyl groups;

X is selected from the group consisting of =O, -OH and -H;

Y is selected from the group consisting of =S and $-SR_5$, where $R_5$ is either hydrogen or an alkyl group; and

each of the bonds (a), (b), and (c) independently is either a double or single bond, provided, however, that bond (a) and bond (b) are not both double bonds.

33. The method of claim 32, wherein said neurodegenerative disease is selected from the group consisting of Alzheimer's disease, Huntington's disease, cerebral ischemia, stroke, [amyotropic] amyotrophic lateral sclerosis, multiple sclerosis, Lewy body disease, Menkes, disease, Wilson disease, Creutzfeldt-Jakob disease, and Fahr disease.